

Most Frequently Occurring Classifications of Patents Returned
From A Search of 09889171 on May 08, 2003

Original Classifications

4 700/252
3 73/628
3 700/259
2 294/86.4
2 318/568.1
2 318/568.18
2 369/44.28
2 378/79

Cross-Reference Classifications

8 901/9
6 901/47
5 219/124.34
5 901/42
3 73/652
3 73/862.637
3 118/500
3 294/902
3 318/567
3 318/568.13
3 318/568.15
3 318/568.16
3 318/569
3 369/30.17
3 369/44.28
3 369/44.29
3 700/245
3 700/259
3 901/2
3 901/3
3 901/46
2 72/240

2 73/862.043
2 73/862.046
2 73/862.541
2 264/540
2 294/86.4
2 318/561
2 318/568.19
2 318/573
2 318/577
2 356/620
2 369/275.3
2 369/275.4
2 369/43
2 414/730
2 425/532
2 700/45
2 700/58
2 700/59
2 700/63
2 700/88
2 901/10
2 901/14
2 901/15
2 901/16
2 901/43
2 901/5
2 901/50

Combined Classifications

8 901/9
6 219/124.34
6 700/259
6 901/47
5 369/44.28
5 700/252
5 901/42
4 294/86.4

4 318/567
4 318/568.13
3 73/628
3 73/652
3 73/862.637
3 118/500
3 294/902
3 318/568.1
3 318/568.15
3 318/568.16
3 318/568.18
3 318/569
3 369/275.4
3 369/30.17
3 369/44.29
3 700/245
3 700/88
3 901/2
3 901/3
3 901/46
2 29/740
2 72/10.7
2 72/240
2 73/862.043
2 73/862.046
2 73/862.541
2 204/298.15
2 264/540
2 318/561
2 318/568.19
2 318/573
2 318/577
2 356/399
2 356/620
2 369/111
2 369/275.3
2 369/43

2 378/79

2 414/730

2 425/531

2 425/532

2 700/247

2 700/249

2 700/45

2 700/58

2 700/59

2 700/63

2 901/10

2 901/14

2 901/15

2 901/16

2 901/43

2 901/5

2 901/50

**Titles of Most Frequently Occurring Classifications of Patents Returned
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8 901/9 (0 OR, 8 XR)
Class 901 : ROBOTS
901/2 ARM MOTION CONTROLLER
901/9 .Closed loop (sensor feedback controls arm movement)

6 219/124.34 (1 OR, 5 XR)
Class 219 : ELECTRIC HEATING
219/50 METAL HEATING (E.G., RESISTANCE HEATING)
219/121.11 .By arc
219/124.1 ..With automatic positioning of arc
219/124.22 ...In response to work shape
219/124.34By using probe means

6 700/259 (3 OR, 3 XR)
Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR
SPECIFIC APPLICATIONS
700/90 SPECIFIC APPLICATION, APPARATUS OR PROCESS
700/245 .Robot control
700/258 ..Having particular sensor
700/259 ...Vision sensor (e.g., camera, photocell)

6 901/47 (0 OR, 6 XR)
Class 901 : ROBOTS
901/46 SENSING DEVICE
901/47 .Optical

5 369/44.28 (2 OR, 3 XR)
Class 369 : DYNAMIC INFORMATION STORAGE OR RETRIEVAL
369/43 WITH SERVO POSITIONING OF TRANSDUCER ASSEMBLY
OVER TRACK COMBINED WITH INFORMATION SIGNAL
PROCESSING
369/44.11 .Optical servo system
369/44.27 ..Initialization/start-up or changing modes of
system
369/44.28 ...While track jumping or crossing

5 700/252 (4 OR, 1 XR)
Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR
SPECIFIC APPLICATIONS
700/90 SPECIFIC APPLICATION, APPARATUS OR PROCESS
700/245 .Robot control
700/250 ..Specific enhancing or modifying technique
(e.g., adaptive control)
700/252 ...Interpolation

5 901/42 (0 OR, 5 XR)
Class 901 : ROBOTS
901/30 END EFFECTOR
901/41 .Tool
901/42 ..Welding

4 294/86.4 (2 OR, 2 XR)

Class 294 : HANDLING: HAND AND HOIST-LINE IMPLEMENTS
294/86.4 GRAPPLE

4 318/567 (1 OR, 3 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems

4 318/568.13 (1 OR, 3 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems
318/568.1 ..With program recording or composing means
318/568.11 ...Multifunction manipulator (i.e., Robot)
318/568.13With particular program teaching method

3 73/628 (3 OR, 0 XR)
Class 073 : MEASURING AND TESTING
73/570 VIBRATION
73/584 .By mechanical waves
73/596 ..Beamed
73/627 ...By reflected wave
73/628Having plural sonic type transmitters or
receivers tranducers

3 73/652 (0 OR, 3 XR)
Class 073 : MEASURING AND TESTING
73/570 VIBRATION
73/649 .Sensing apparatus
73/652 ..With inertia element

3 73/862.637 (0 OR, 3 XR)
Class 073 : MEASURING AND TESTING
73/862 DYNAMOMETERS
73/862.381 .Responsive to force
73/862.621 ..By measuring elastic deformation
73/862.636 ...Specific type of elastic member
73/862.637Flexible element (e.g., beam, plate, or
web)

3 118/500 (0 OR, 3 XR)
Class 118 : COATING APPARATUS
118/500 WORK HOLDERS, OR HANDLING DEVICES

3 294/902 (0 OR, 3 XR)
Class 294 : HANDLING: HAND AND HOIST-LINE IMPLEMENTS
294/902 GRIPPING ELEMENT

3 318/568.1 (2 OR, 1 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems
318/568.1 ..With program recording or composing means

3 318/568.15 (0 OR, 3 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems
318/568.1 ..With program recording or composing means
318/568.11 ...Multifunction manipulator (i.e., Robot)
318/568.15With particular interpolation means

3 318/568.16 (0 OR, 3 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems
318/568.1 ..With program recording or composing means
318/568.11 ...Multifunction manipulator (i.e., Robot)
318/568.16With particular sensing device

3 318/568.18 (2 OR, 1 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems
318/568.1 ..With program recording or composing means
318/568.11 ...Multifunction manipulator (i.e., Robot)
318/568.17With multimode control (e.g., course-fine,
position-force, etc.)
318/568.18Including velocity control

3 318/569 (0 OR, 3 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems
318/569 ..Digital or numerical systems

3 369/275.4 (1 OR, 2 XR)
Class 369 : DYNAMIC INFORMATION STORAGE OR RETRIEVAL
369/272 STORAGE MEDIUM STRUCTURE
369/275.1 .Optical track structure (e.g., phase or
diffracting structure, etc.)
369/275.4 ..Pit/bubble/groove structure specifies

3 369/30.17 (0 OR, 3 XR)
Class 369 : DYNAMIC INFORMATION STORAGE OR RETRIEVAL
369/24.01 INFORMATION LOCATION OR REMOTE OPERATOR
ACTUATED CONTROL
369/30.01 .Selective addressing of storage medium (e.g.,
programmed access)
369/30.03 ..Of optical storage medium
369/30.1 ...Transducer movement control using recorded
information indicative of location of information
(e.g.,
track address)
369/30.17Transducer velocity control

3 369/44.29 (0 OR, 3 XR)

Class 369 : DYNAMIC INFORMATION STORAGE OR RETRIEVAL
 369/43 WITH SERVO POSITIONING OF TRANSDUCER ASSEMBLY
 OVER TRACK COMBINED WITH INFORMATION SIGNAL
PROCESSING
 369/44.11 .Optical servo system
 369/44.27 ..Initialization/start-up or changing modes of
 system
 369/44.29 ...Servo loop gain/switching control

3 700/245 (0 OR, 3 XR)
 Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR
 SPECIFIC APPLICATIONS
 700/90 SPECIFIC APPLICATION, APPARATUS OR PROCESS
 700/245 .Robot control

3 700/88 (1 OR, 2 XR)
 Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR
 SPECIFIC APPLICATIONS
 700/1 GENERIC CONTROL SYSTEM, APPARATUS OR PROCESS
 700/86 .Having preparation of program
 700/88 ..Playback

3 901/2 (0 OR, 3 XR)
 Class 901 : ROBOTS
 901/2 ARM MOTION CONTROLLER

3 901/3 (0 OR, 3 XR)
 Class 901 : ROBOTS
 901/2 ARM MOTION CONTROLLER
 901/3 .Teaching system

3 901/46 (0 OR, 3 XR)
 Class 901 : ROBOTS
 901/46 SENSING DEVICE

2 29/740 (1 OR, 1 XR)
 Class 029 : METAL WORKING
 29/700 MEANS TO ASSEMBLE OR DISASSEMBLE
 29/729 .Means to assemble electrical device
 29/739 ..Means to fasten electrical component to
 wiring board, base, or substrate
 29/740 ...Chip component

2 72/10.7 (1 OR, 1 XR)
 Class 072 : METAL DEFORMING
 72/6.1 WITH USE OF CONTROL MEANS ENERGIZED IN RESPONSE
 TO ACTIVATOR STIMULATED BY CONDITION SENSOR
 72/6.2 .Metal deforming by use of roller or
 roller-like tool element
 72/8.1 ..Including plural sensors or sensor responsive
 to comparison between plural conditions
 72/10.1 ...Sensing tool or tool-linked part
 72/10.7Sensing roll gap

2 72/240 (0 OR, 2 XR)
 Class 072 : METAL DEFORMING
 72/199 BY USE OF ROLLER OR ROLLER-LIKE TOOL-ELEMENT

72/237 .With carrier for roller-couple or tool-couple

72/240 ..With variation of bite of roller-couple
during deformation

2 73/862.043 (0 OR, 2 XR)
Class 073 : MEASURING AND TESTING
73/862 DYNAMOMETERS
73/862.041 .Responsive to multiple loads or load
components
73/862.042 ..Along or about mutually orthogonal axes
73/862.043 ...Three dimensional (e.g., x, y, z axes)

2 73/862.046 (0 OR, 2 XR)
Class 073 : MEASURING AND TESTING
73/862 DYNAMOMETERS
73/862.041 .Responsive to multiple loads or load
components
73/862.046 ..Transducer array (e.g., columns and rows)

2 73/862.541 (0 OR, 2 XR)
Class 073 : MEASURING AND TESTING
73/862 DYNAMOMETERS
73/862.381 .Responsive to force
73/862.541 ..Combined

2 204/298.15 (1 OR, 1 XR)
Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY
204/193 APPARATUS
204/298.01 .Coating, forming or etching by sputtering
204/298.02 ..Coating
204/298.15 ...Specified work holder

2 264/540 (0 OR, 2 XR)
Class 264 : PLASTIC AND NONMETALLIC ARTICLE SHAPING OR
TREATING: PROCESSES
264/500 DIRECT APPLICATION OF FLUID PRESSURE
DIFFERENTIAL TO PERMANENTLY SHAPE, DISTORT, OR
SUSTAIN WORK

same
264/523 .Including application of internal fluid
pressure to hollow finite length parison to expand
264/540 ..Including extrusion
into conformity with female mold part

2 318/561 (0 OR, 2 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/561 .Adaptive or optimizing systems including
"bang-bang" servos

2 318/568.19 (0 OR, 2 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)

318/567 .Program- or pattern-controlled systems
318/568.1 ..With program recording or composing means
318/568.11 ...Multifunction manipulator (i.e., Robot)
318/568.19With particular coordinate transformation
means

2 318/573 (0 OR, 2 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems
318/569 ..Digital or numerical systems
318/570 ...Contouring systems
318/573With interpolating means

2 318/577 (0 OR, 2 XR)
Class 318 : ELECTRICITY: MOTIVE POWER SYSTEMS
318/560 POSITIONAL SERVO SYSTEMS (E.G.,
SERVOMECHANISMS)
318/567 .Program- or pattern-controlled systems
318/575 ..Multiple axes analog systems
318/576 ...Nonmechanical line, seam or edge followers
318/577Optical or photoelectric line followers

2 356/399 (1 OR, 1 XR)
Class 356 : OPTICS: MEASURING AND TESTING
356/399 BY ALIGNMENT IN LATERAL DIRECTION

2 356/620 (0 OR, 2 XR)
Class 356 : OPTICS: MEASURING AND TESTING
356/614 POSITION OR DISPLACEMENT
356/615 .Position transverse to viewing axis
356/620 ..Special mark or target on object

2 369/111 (1 OR, 1 XR)
Class 369 : DYNAMIC INFORMATION STORAGE OR RETRIEVAL
369/99 SPECIFIC DETAIL OF INFORMATION HANDLING PORTION
OF SYSTEM
369/100 .Radiation beam modification of or by storage
medium
369/111 ..Spiral or helical track

2 369/275.3 (0 OR, 2 XR)
Class 369 : DYNAMIC INFORMATION STORAGE OR RETRIEVAL
369/272 STORAGE MEDIUM STRUCTURE
369/275.1 .Optical track structure (e.g., phase or
diffracting structure, etc.)
369/275.3 ..Track data format/layout

2 369/43 (0 OR, 2 XR)
Class 369 : DYNAMIC INFORMATION STORAGE OR RETRIEVAL
369/43 WITH SERVO POSITIONING OF TRANSDUCER ASSEMBLY
OVER TRACK COMBINED WITH INFORMATION SIGNAL
PROCESSING

2 378/79 (2 OR, 0 XR)

Class 378 : X-RAY OR GAMMA RAY SYSTEMS OR DEVICES
378/1 SPECIFIC APPLICATION
378/70 .Diffraction, reflection, or scattering analysis
378/71 ..Diffraction
378/79 ...Analyte support

2 414/730 (0 OR, 2 XR)
Class 414 : MATERIAL OR ARTICLE HANDLING
414/680 VERTICALLY SWINGING LOAD SUPPORT
414/729 .Grab
414/730 ..Programmable or condition responsive means controls grab operation

2 425/531 (1 OR, 1 XR)
Class 425 : PLASTIC ARTICLE OR EARTHENWARE SHAPING OR TREATING: APPARATUS
425/522 FEMALE MOLD AND MEANS TO SHAPE PARISON DIRECTLY BY INTERNAL FLUID PRESSURE, (E.G., BLOW MOLD, ETC.)
425/528 .Including means to prepare parison
425/531 ..Parison severing means

2 425/532 (0 OR, 2 XR)
Class 425 : PLASTIC ARTICLE OR EARTHENWARE SHAPING OR TREATING: APPARATUS
425/522 FEMALE MOLD AND MEANS TO SHAPE PARISON DIRECTLY BY INTERNAL FLUID PRESSURE, (E.G., BLOW MOLD, ETC.)
425/528 .Including means to prepare parison
425/532 ..Parison forming extruder

2 700/247 (1 OR, 1 XR)
Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR SPECIFIC APPLICATIONS
700/90 SPECIFIC APPLICATION, APPARATUS OR PROCESS
700/245 .Robot control
700/247 ..Plural controlled devices or plural nonvision controlling devices

2 700/249 (1 OR, 1 XR)
Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR SPECIFIC APPLICATIONS
700/90 SPECIFIC APPLICATION, APPARATUS OR PROCESS
700/245 .Robot control
700/247 ..Plural controlled devices or plural nonvision controlling devices
700/249 ...Plural processors

2 700/45 (0 OR, 2 XR)
Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR SPECIFIC APPLICATIONS
700/1 GENERIC CONTROL SYSTEM, APPARATUS OR PROCESS
700/28 .Optimization or adaptive control
700/44 ..Feed-forward (e.g., predictive)
700/45 ...Combined with feedback

2 700/58 (0 OR, 2 XR)
Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR

SPECIFIC APPLICATIONS

700/1 GENERIC CONTROL SYSTEM, APPARATUS OR PROCESS
700/56 .Digital positioning (other than machine tool)

700/57 ..Alignment or registration
700/58 ...Having position marking

2 700/59 (0 OR, 2 XR)
Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR
 SPECIFIC APPLICATIONS
700/1 GENERIC CONTROL SYSTEM, APPARATUS OR PROCESS
700/56 .Digital positioning (other than machine tool)

700/57 ..Alignment or registration
700/59 ...Having optical sensing (e.g., image
 projection)

2 700/63 (0 OR, 2 XR)
Class 700 : DATA PROCESSING: GENERIC CONTROL SYSTEMS OR
 SPECIFIC APPLICATIONS
700/1 GENERIC CONTROL SYSTEM, APPARATUS OR PROCESS
700/56 .Digital positioning (other than machine tool)

700/61 ..Multiple axis motion or path control
700/63 ...Including velocity or acceleration control

2 901/10 (0 OR, 2 XR)
Class 901 : ROBOTS
901/2 ARM MOTION CONTROLLER
901/9 .Closed loop (sensor feedback controls arm
 movement)
901/10 ..Sensor physically contacts and follows work
 contour

2 901/14 (0 OR, 2 XR)
Class 901 : ROBOTS
901/14 ARM MOVEMENT (SPATIAL)

2 901/15 (0 OR, 2 XR)
Class 901 : ROBOTS
901/14 ARM MOVEMENT (SPATIAL)
901/15 .Jointed arm

2 901/16 (0 OR, 2 XR)
Class 901 : ROBOTS
901/14 ARM MOVEMENT (SPATIAL)
901/16 .Cartesian (X-Y-Z arm)

2 901/43 (0 OR, 2 XR)
Class 901 : ROBOTS
901/30 END EFFECTOR
901/41 .Tool
901/43 ..Spray painting or coating

2 901/5 (0 OR, 2 XR)
Class 901 : ROBOTS

901/2 ARM MOTION CONTROLLER
901/3 .Teaching system
901/5 ..Machine driven lead through

2 901/50 (0 OR, 2 XR)
Class 901 : ROBOTS
901/50 MISCELLANEOUS

5204814 99

5276777 99

5565749 99

6404849 99

5390288 80

5540821 80

6111930 80

5438418 76

4427158 73

4546940 73

4552397 73

4617502 73

4831549 73

4852018 73

4937848 73

4941106 73

4987356 73

5006999 73

5264178 73

5288224 73

5314722 73

5426625 73

5553500 73

5587470 73

5600627 73

5604314 73

5796610 73

5832415 73

5974908 73

6000523 73

6018507 73

6055218 73

6091695 73

RE37065 73

3805702 70

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